CITY OF SAN ANTONIO

November 19, 2007

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Mayor and Council Members:

SUBJECT: SAP Procurement-to-Pay Audit Report

We are pleased to send you the SAP Procurement-to-Pay audit report. This audit began in April 2007 and concluded with an exit meeting with department management in October 2007. Management's response is included in Appendix A of the report and indicates full acceptance of all recommendations made in the audit report.

The Purchasing and Contract Services, Finance and the Information Technology Services Departments should be commended for their cooperation and assistance during this audit.

The Office of the City Auditor is available to discuss this material with you individually at your convenience.

Respectfully submitted,

Pete M. Gonzales, Jr., CPA, CFE
City Auditor

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Sheryl L. Sculley, City Manager
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CITY OF SAN ANTONIO

OFFICE OF THE CITY AUDITOR

Pete M. Gonzales, Jr., CPA, CFE

Audit of the City's SAP Procurement-to-Pay Process

Project No. AU07-009

Issue Date: November 19, 2007

EXECUTIVE SUMMARY
Project No. AU07-009
November 19, 2007

Audit of the SAP Procurement- to-Pay Process

Results in Brief	Recommendations
As part of long range audit planning, we conducted an audit of the SAP Procurement-to-Pay process. Overall, our intent was to identify controls we believe should be considered by Purchasing, Information Technology Services, and Finance management during their assessment of SAP roles. Key audit objectives and conclusions follow: • Are security and control features in SAP sufficient to ensure any errors or indications of inappropriate transactions are promptly detected during the purchasing process? Generally, yes. However, authorization controls over the Procurement Process need to be strengthened. • Are procurement roles in SAP adequately segregated and are users adequately trained? No. Procurement roles are not segregated and users are not adequately trained. *However, it should be noted that the Finance, Purchasing and Contract Services, and Information Technology Services Departments have taken action to address control issues. These departments are in the midst of a citywide SAP procurement role Assessment, for which the objective is to condense the number of users, consolidate responsibility, and increase user efficiency by providing additional and effective training.*	This report contains a number of recommendations supportive of the actions taken by City management. Key recommendations of this report are addressed to the Purchasing and Finance Departments as follows: • Implement additional security and control features in SAP in order to detect any changes made to purchase orders after they have been approved. Also, activate controls in SAP that require an approval to issue a purchase order against an annual contract. • Activate budgetary constraints to ensure department budget dollars are available prior to initiating contracts and making purchases. • Activate controls in SAP to restrict users from using general ledger codes that do not align with materials master codes. • Work with user departments to reassign SAP roles such that no single individual has a combination of roles that would constitute a segregation of responsibilities risk. Management's response can be seen in Appendix A.

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INTRODUCTION

SAP PROCUREMENT–TO–PAY PROCESS

The City of San Antonio (the City) uses the Systems, Applications & Products in data processing system (SAP) for its procurement needs. The SAP component used in the Procurement process is the Materials Management module (MM) which is highly integrated with the Finance, Controlling, Production Planning, Sales and Distribution, Quality Management, Plant Maintenance and Warehouse Management modules. City departments have designated staff members who are responsible for initiating the procurement of, and receiving materials and services utilizing the SAP system through various transactions.

BACKGROUND

The City began its Enterprise Resource Management (ERM) implementation in May 2001 and began using SAP in October 2004. City Departments primarily use SAP to procure goods and services. The City currently has approximately 2,800 SAP users. Departmental personnel responsible for procurement duties are assigned procurement roles in SAP. The roles were designed to separate the data entry, approving, goods receipting and invoice receipting procurement functions. The SAP procurement roles and responsibilities follow:

Procurement Role	Role Responsibilities
Departmental Requisitioner	Identifies the need for a material or service and then generates the Purchase Requisition.
Departmental Purchasing Coordinator	Creates and changes Purchase Orders and manages all approved departmental requisitions.
Departmental Purchase Order/Contracts Approver (Expenditure Contracts)	Releases (approves) Purchase Orders, confirms all signatures have been executed, and performs the online release of the contract.
Departmental Purchase Requisition Approver – Level 1	Approves/Rejects requisitions within their departments for $25,000 and under.
Departmental Purchase Requisition Approver – Level 2	An additional level is required for requisitions greater than $25,000. This role usually resides with the Department Director or designee.
Departmental Purchases Receiver	For goods received – Within 24 hours of receipt of goods, receiver inspects the material to ensure the item(s) purchased is what was ordered and is undamaged and

Procurement Role	Role Responsibilities
	then makes the appropriate entries into SAP. If goods are not satisfactory, the receiver has the ability to return goods.
	For services received – Inspects the service(s) rendered to ensure that they were completed satisfactorily and in compliance with the contract and then makes the appropriate entries into SAP. If services are not satisfactory the receiver may reject services.
	For monitoring expenditure contracts – Enters contractual amendments and manages renewal terms.
	This role also has the ability to create the Tracked Property Management record for items within $1,500 - $4,999.

The City's system of internal controls for the purchase of material and services includes control mechanisms such as documented competitive bidding and contracting procedures, SAP user training, segregated duties, and diligent managerial cost statement reviews.

During fiscal year 2007 (October 1, 2006 – September 30, 2007) City departments had created over $585 million in purchase orders and had over $1.5 billion in active expenditure contracts.[1]

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[1] Source: SAP (ME80FN) & SAP (zconuse)

OBJECTIVES AND CONCLUSIONS

- Are security and control features in SAP sufficient to ensure any errors or indications of inappropriate transactions are promptly detected during the purchasing process?

  Generally, yes. However, authorization controls over the procurement process need to be strengthened.

- Are procurement roles in SAP adequately segregated and are users adequately trained?

  No. Procurement roles are not segregated and users are not adequately trained.

  However, it should be noted that the Finance, Purchasing and Contract Services, and Information Technology Services Departments have taken action to address these control issues. These departments are in the midst of a citywide SAP procurement role assessment. The objective is to reduce the number of users, consolidate responsibility and increase user efficiency by providing additional and effective training. This report contains recommendations we believe should be considered as part of the City's ongoing efforts to improve usage of SAP. We recognize that some of the issues we are reporting have already been identified by City management.

OBSERVATIONS AND RECOMMENDATIONS
A –Internal Controls in the SAP Procurement-to-Pay Process

OBSERVATION

Controls over the procurement process in SAP need enhancement. The following is a listing of the specific controls that need strengthening:

- Purchase orders can be released from an annual contract without approval. When SAP was implemented this control was not added because it was believed an additional approval may slow the procurement process. However, if this control is not in place purchases can be made without management's knowledge.

- Purchase order data can be altered after having been approved. While SAP does track changes made to purchase orders, if frequent reviews of purchases are not made, the risk of loss, theft, and/or misappropriation increases.

- Budget availability controls have not been implemented; therefore, departments could possibly exceed their budgets if they are not monitored effectively.

- Departmental purchasers have the ability to assign incorrect general ledger codes for items being purchased. Currently, there is no control requiring the purchaser to use the appropriate general ledger account in alignment with the material master code he/she is using for items being purchased. All purchases should be coded and classified accurately. Inaccurate coding could result in misallocations between general ledger accounts, material master codes, cost elements, and cost centers.

- At the beginning of the audit, training for SAP procurement users was not mandatory. Users should be adequately trained in order to reduce the number of errors and time spent purchasing goods and/or services. Currently, Purchasing and ITSD are requiring mandatory training for SAP users with procurement roles.

BACKGROUND

The City primarily uses SAP to make purchases for goods and/or services. Most City departments have the authority to procure any good or non-professional service not related to architecture or engineering in the amount of $3,000 or less and professional services up to $25,000. When the particular department determines a need for a good or service, the process is as follows:

- Departmental Requisitioner, upon determining a need for goods or services, creates and then submits a purchase requisition for approval.
- Requisition Approver reviews the purchase requisition, then approves or rejects the requisition.
- If approved, the department creates a purchase order in SAP and transmits it to a vendor.
- Vendor provides the material or service.
- Department creates a goods receipt in SAP once the material or service has been received.
- Vendor mails invoice directly to Finance – Accounts Payable.
- Finance creates the invoice receipt in SAP.
- A three-way match occurs (Purchase Order, Goods Receipt, and Invoice Receipt).
- Payment is made.

SAP contains many security and control features which detect and track changes made to purchase orders, contracts and requisitions. However, during the course of this audit we identified several control issues requiring discussion.

DISCUSSION

Our preliminary test work revealed that there are significant control issues that exist within SAP related to procurement processes. Areas in the procurement process have been identified where changes can be made without management approval and/or detection. Purchase orders can be released (issued) without management approval if there is an approved contract in SAP. Also, the delivery address for ordered goods and services can be altered after the purchase order has been approved without any further review and/or approval.

Controls to restrict SAP procurement users from charging items listed in the material master to inappropriate general ledger accounts are not being used. For example, currently a user could charge a computer to the office supplies account.

Budget availability controls have not been activated to ensure budget dollars are available for purchases. If controls are not in place to restrict SAP users from assigning incorrect cost objects to purchases, the end result could be budget overruns or short falls for particular line items affecting future budget forecasts.

If additional security controls are not added and the procurement roles are not segregated, the likelihood of loss, misappropriation, and theft of City assets is greatly increased. Without the budget availability controls, the possibility of budget overrun exists, especially if department managers are not adequately monitoring their budgets.

Also, if SAP procurement users and approvers are not adequately trained, inefficiencies result. Purchases may not be made in a timely manner due to user errors; if approvers are not adequately trained, the errors could go undetected. In FY 2006 the City did not realize almost $85,000 [2] in discounts offered. This was partially due to City departments not timely entering their goods/materials received into SAP. When this occurs, the three-way match between the purchase order, goods receipt and invoice receipt is not operational. This can cause delays including late payments resulting in a violation of the Prompt Payment Act.

It should be noted that Purchasing, Finance, and ITSD have taken a proactive role in making improvements to streamline the procurement process. These departments are requiring that all departmental purchasing coordinators and approvers be retrained for their particular role, to ensure knowledgeable and appropriate personnel are creating and approving purchases.

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[2] Source: SAP (ZFCDIST) FY 2006 – Cash Discount Gained & Lost Report

RECOMMENDATION

Implement additional security and control features in SAP in order to detect any changes made to purchase orders after they have been approved. Also, activate controls in SAP that require an approval to issue a purchase order against an annual contract.

Activate budgetary constraints to ensure department budget dollars are available prior to initiating contracts and making purchases.

Activate controls to restrict users from using general ledger codes that do not align with materials master codes.

B – SAP Procurement Role Assignments

OBSERVATION

The need for a segregation of functions involved in the procurement process requires additional management attention. Some City departments are not separating procurement functions; i.e. they are assigning incompatible roles to the same individual. If procurement roles are not segregated an environment exists that is conducive to loss, misappropriation, and theft of City assets.

BACKGROUND

SAP security roles are assigned by ITSD at the request of Department management. For new SAP users the department will complete the SAP Production User Access Request Form. The Department head or designee will determine what roles the employee's position requires, sign the form, and forward it to ITSD Security for processing. There are 12 procurement roles:

- Departmental Purchasing Receiver
- Departmental Buyer
- Departmental Warehouse Reservationists
- Departmental Warehouse Manager
- Departmental Warehouse Maintainer
- Departmental Purchase Contract Administrator (Expenditure)
- Departmental Purchase Order/Contract Approver (Expenditure)
- Departmental Purchasing Coordinator
- Departmental Requisitioner
- Monitor Contracts
- Departmental Purchase Requisition Approver Level 1 & 2

The City's system of internal controls for the purchase of materials and services includes control mechanisms such as documented competitive bidding and contracting procedures, user training, segregation of duties, and diligent managerial cost statement reviews.

The SAP enterprise computer system is designed with distinct roles of responsibility for material and service procurement that facilitate appropriate segregation of duties. The security roles are designed to separate the following procurement functions:

- Data Entry - The creation and revision of purchase requisitions, invitations for bids, contracts, and purchase orders. Also includes the creation and revision of non-purchase order invoices.

- Approval - Approval indicates that there is a City service requirement for the purchase, and that the accounting entry and information entered is correct. All purchase requisitions, contracts and non-purchase order invoices require on-line approval in SAP. Purchase orders created from purchase requisitions require approval. However, purchase orders referencing an annual contract do not require additional approval.
- Goods Receipt – Goods receipt attests that the materials or services ordered were actually received as management intended.
- Invoice Receipt – Purchase order invoice information is entered by the Finance Department's Accounts Payable function. If the purchase order, goods receipt, and invoice receipt information match within approved tolerance, the invoice is cleared for payment. Non-purchase order invoice information is entered and approved within individual departments.

The Information Technology Services Department is responsible for maintenance of the vendor and material master database in the enterprise computer system.

DISCUSSION

We determined that some Department Managers had approved role assignments resulting in some employees having too much control over multiple aspects of the procurement process.

We reviewed 948 SAP users with procurement-to-pay roles and determined that 379 of them (40 percent) have conflicting roles. For example, 257 users can create a purchase order and also receive goods in SAP. Employees who are involved in the initiation phase of a purchase should not be involved in the receiving process. Sixty-three users have the ability to create *and* approve purchase orders, create *and* approve contracts, and also enter the goods receipt for the same purchase. Also, 119 users can create and release (approve) purchase orders from a non-annual contract without further approval or detection. We identified six users who had functional roles covering the entire procurement-to-pay process. However, we did not observe any improprieties.

The ability for all departmental purchasers to purchase goods from annual contracts without approval in the SAP R/3 enterprise computer system heightens the need for a proper segregation of procurement responsibilities.

The Purchasing and Contract Services, Finance, and ITSD Departments are currently working together to assess the SAP Procurement Role and improve procurement internal controls by segregating responsibilities for data entry, approval, and receipting of goods.

Purchasing and ITSD have notified City departments of existing conflicting roles and have identified which employees possess them. They have also communicated the need to separate conflicting functions to each department responsible for making purchases.

RECOMMENDATION

We recommend Finance and Purchasing & Contract Services work with user departments to reassign SAP roles such that no single individual has a combination of roles that would constitute a segregation of responsibilities risk.

GENERAL AUDIT INFORMATION

STATEMENT OF COMPLIANCE WITH GAGAS

We conducted this process audit from April to September 2007 in accordance with Generally Accepted Government Auditing Standards. Those standards require that we plan and perform the audit to obtain sufficient, appropriate evidence to provide a reasonable basis for our findings and conclusions based on our audit objectives. We believe that the evidence obtained provides a reasonable basis for our findings and conclusions based on our audit objectives. Our audit included tests of management controls that we considered necessary under the circumstances.

SCOPE AND METHODOLOGY

For the audit period we reviewed the internal controls and processes in place for the Procurement-to-Pay process. We collected information by interviewing management and staff from the Finance, Purchasing and Contract Services, and Information Technology Services Departments. From interviews we identified focus areas to concentrate our audit testing Our audit included tests of system controls over the purchasing process. We also used Audit Software to test for segregation of duty violations regarding the assignment of SAP procurement roles.

STAFF ACKNOWLEGEMENT

Barry Lipton, CPA, DABFA, Deputy City Auditor
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Baltazar Vargas, MBA

APPENDIX A – Management Response

CITY OF SAN ANTONIO

P. O. BOX 839966
SAN ANTONIO TEXAS 78283-3966

November 16, 2007

City Auditor
San Antonio, Texas

RE: Management's Corrective Action Plan for the Audit of the SAP Procurement to Pay Process

City Management, Finance, and the Purchasing & Contract Services Departments have reviewed the audit report and have developed the Corrective Action Plans below corresponding to report recommendations.

#	Description	Audit Report Page	Accept, Partially Accept, Decline	Responsible Person's Name/Title	Completion Date
A 1.	**Controls over the procurement process in SAP need enhancement.**	4			
	• Implement additional security and control features in SAP in order to detect any changes made to purchase orders after they have been approved.		Accept	Janie B. Cantu, Purchasing Director Hugh Miller, ITSD Director	April 1, 2008
	• Activate controls in SAP that require an approval to issue a purchase order against an annual contract.		Accept	Janie B. Cantu, Purchasing Director Hugh Miller, ITSD Director	January 1, 2008
	• Activate budgetary constraints to ensure department budget dollars are available prior to initiating contracts and making purchases.		Accept	Troy Elliott, Assistant Finance Director Hugh Miller, ITSD Director	October 1, 2009
	• Activate controls to restrict users from using general ledger codes that do not align with materials master codes.		Accept	Janie B. Cantu, Purchasing Director Hugh Miller, ITSD Director	February 1, 2008
	• Users should be adequately trained in order to reduce the number of errors and time spent purchasing goods and/or services.		Accept	Janie B. Cantu, Purchasing Director	January 1, 2008

			Recommendation		
#	Description	Audit Report Page	Accept, Partially Accept, Decline	Responsible Person's Name/Title	Completion Date

Action plan:

- SAP keeps track of all changes to purchase orders including those made after the original release/approval. SAP would be configured to require all changes to be approved within the department that originally released/approved the purchase order. A PO change will cause the original approval to be revoked and will return the PO to the workflow approval process, in the same manner as requisitions are handled. A memo requesting that ITSD configure the system as recommended will be submitted for follow up action.

- SAP can be configured to require release/approval of all purchase orders regardless of whether they reference a contract or not. Therefore, annual contract Purchase Orders will be released in the same manner as regular purchase orders. A memo requesting that ITSD configure the system to provide for the approval will be submitted for follow up action.

- With the implementation of SAP additional budgetary controls are available. Currently, there are several effective mitigating controls outside of SAP that are utilized to monitor Departmental Budgets, such as Departmental and Office of Management and Budget monthly financial reviews. The Finance Department also recently reorganized and created a dedicated Financial Reporting Group to monitor and report monthly the City's financial results. The addition and implementation of SAP's Availability Control will further strengthen controls. Availability Control is targeted to be implemented for Capital Projects and Grants Management during fiscal year 2008 and during fiscal year 2009 for operational funds.

- Currently, SAP ties a specific G/L number with a material master record. Changing the G/L on the requisition is possible and has caused misalignment of material group codes and G/L numbers. To prevent this from occurring, it is recommended that the G/L field be made "read-only". This will allow the field to populate automatically with the G/L derived from the material master record selected by the requisitioner. On occasion, departments change the G/L number when the derivation of the G/L and material do not match or when a line item does not have a sufficient budget to cover the amount of the purchase. This action is taken because there is no provision at the department level for the transfer of budgeted funds between accounts. A memo instructing ITSD to make the G/L field "read-only" is being prepared for follow up action. This recommended change will not prevent a requisitioner from misstating the item being purchased on the requisition. It will only prevent the requisitioner from being able to change a G/L that is not connected with the item being purchased.

- Although training was provided during the initial SAP implementation, personnel and other changes over the last couple of years have resulted in untrained staff being assigned roles. Purchasing and ITSD are now providing mandatory training for staff members that possess the six procurement related SAP roles. Additionally, staff are being tested to ensure that they understand their roles and to minimize errors.

- Purchasing and ITSD reviewed all of the procurement roles and the department staff assigned these roles. Department Directors were asked to review the roles and to ensure that appropriate staff held the roles and to request their attendance at the mandatory training. Those who did not attend the training and pass the tests will have the roles taken away from them. This is now the requirement for future assignment of roles and can only be granted upon passing the test or approval of the Purchasing & Contract Services Director. Our efforts have resulted in reducing the 1,500 procurement related roles held by staff by 397. Additional reductions are being finalized through the training and testing that will be completed by the end of November.

#	Description	Audit Report Page	Accept, Partially Accept, Decline	Responsible Person's Name/Title	Completion Date
B	2. **The need for a segregation of functions involved in the procurement process requires additional management attention**				
	▪ Work with user departments to reassign SAP roles such that no single individual has a combination of roles that would constitute a segregation of responsibilities risk.		Accept	Troy Elliott, Assistant Finance Director Hugh Miller, ITSD Director	September 30, 2008

Action plan:

➤ The City's SAP system was placed into production on October 1, 2004. In preparation for the implementation, roles were designed in order to control conflicts and issues associated with segregation of duties. A Segregation of Duties (SOD) tool provided by the systems integrator was provided to define and detect conflicts between roles and the individuals possessing the roles. Mitigating controls were evaluated and determined to be acceptable in instances where conflicts were identified. Since the implementation date of SAP, personnel have changed job positions, relocated to different departments and additional roles have been provided or removed from personnel. Although mitigating controls exist they have not been formally documented.

In order to further mitigate conflicts arising from segregation of duties, the Finance Department and Information Technology Services Department are in the process of developing plans to improve upon existing segregation of duties. The plans include the selection and implementation of a SOD software tool to monitor and facilitate the management of SAP roles, provision and removal of SAP Roles, and identify potential conflicts between roles and positions. ITSD has undergone a process to evaluate SOD software packages and are anticipating selecting a package and City Council Action in the upcoming months. In addition, the Purchasing Department has under gone an extensive study of Procurement Roles and has analyzed the design of existing roles, identified potential conflicts, recommended improvements to current business processes and reduced the number of existing conflicts.

While City staff is in general agreement with this audit's findings and recommendations, the following supplemental information is provided to identify other actions that the City has undertaken related to the audit topics.

TRAINING/SAP ROLES

1. It was determined that the number of users with procurement related SAP roles was higher than necessary. Department Directors were provided a list of SAP procurement users for review and a role definition/segregation of duties conflict table to assist them in recommending changes (deletions/revisions). As a result, the number of staff holding these associated roles has been reduced significantly.
2. Mandatory training has been provided to staff holding the 6 procurement related roles. Attendees were required to pass a competency test to retain the roles. The required training and test will continue into the future.
3. ITSD and Purchasing are planning additional training covering various SAP topics which is intended to reduce the number of errors and staff time spent purchasing goods and services.
4. Focus group meetings were held with department staff to discuss the types of issues and errors that have been occurring.
5. New security procedures are in place regarding approval of procurement related roles. Roles are not provisioned until certification of training has been received by the SAP Security Administrator. The Director of Purchasing & Contract Services must approve any procurement roles requested if the mandatory training and testing has not been completed.
6. The City is purchasing Segregation of Duties ("SOD") software that will monitor and facilitate the management of SAP roles, provision and removal of roles and identify potential conflicts between roles and positions.
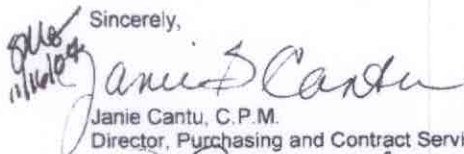
SHARED SERVICES

The need to adopt a Centralized Services organizational structure for Finance and Purchasing functions is being reviewed for implementation. Many of the issues identified and the lack of consistency in both financial and procurement activities could be reduced substantially with both departments directing those activities within individual departments. Consistency, competency and compliance with policies and procedures would result from adopting this concept. With procurement issues specifically, staff member in departments holding critical purchasing roles would eliminate many of the problems that have been encountered because they would be reporting directly to Purchasing & Contract Services. Once again, this would save staff time, minimize errors and help in training.
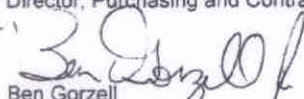
OTHER COMMENTS

Page 6 of the Audit Discussion section identifies the City's loss of contractually offered prompt payment discounts totaling $85,000 in FY 2006. While staff acknowledges that inadequate training of approvers and procurement users may have contributed minimally to this problem, other issues related to payment approval arise regularly which may cause department staff to miss the vendor's time period for discounts, such as vendor performance problems and holding payment on partial receipt until the full order is received, among others which we consider legitimate reasons.

We are committed to addressing the recommendations in the audit report and the plan of actions presented above – we appreciate your office's assistance in our own process review of this important City function. Please contact us if you have any questions or need further information.

Sincerely,

Janie Cantu, C.P.M.
Director, Purchasing and Contract Services

Ben Gorzell
Director, Finance

Hugh Miller, CTO
Director, Information Technology Services